

REMARKS

Claims 1-4, 6, 7 and 9-16 are pending in the application.

Claim 1 is amended to delete “plural” before “coating layers”. Claims 13 and 14 are amended to replace “plural” with “at least three or more” before “coating layers”.

Entry of the Amendment is respectfully requested along with reconsideration and review of the claims on the merits.

Formal Matter

Applicants appreciate the Examiner’s consideration of the Information Disclosure Statement submitted on November 5, 2004.

Double Patenting Rejection

The Double patenting rejection is maintained over claims 1-6 of U.S. Patent No. 5,985,466; claims 1-13 of U.S. Patent No. 6,310,118; claims 1-20 of U.S. Patent No. 5,763,085; and claims 1-3 of U.S. Patent No. 6,207,280.

Applicants respond as follows.

With respect to U.S. Patent No. 5,763,085, Applicants emphasize that none of claims 1-20 of the ‘085 patent disclose an organic coating as required by present claim 1. Thus, claims 1-20 of US ‘085 fail to render obvious the present invention.

With respect to U.S. Patents No. 5,985,466 (claims 1-6), No. 6,310,118 (claims 1-13), and No. 6,207,280 (claims 1-3), Applicants file concurrently herewith a combined Terminal Disclaimer to obviate the double patenting rejection.

Accordingly, Applicants respectfully request reconsideration and withdrawal of each of the double patenting rejections.

Response to Claim Rejection - 35 U.S.C. §103

Claims 1-4, 6, 7 and 9-16 are rejected under 35 U.S.C. §103(a) as being unpatentable over JP 62-115071 in view of U.S. Patent No. 3,767,443 to Clark et al., or a combination of JP '071 and Clark.

The Examiner cites JP '071 as teaching production of a black pigment having excellent covering power and spread in cosmetic applications. The pigment is prepared by forming a thin interlayer of a metal oxide or its hydrate on the surface of an inorganic or organic powdery material. The powder is further coated with Fe_3O_4 . The Examiner recognizes that the composition of JP '071 comprises a core coated with two layers as opposed to the three or more layers of the instant claims.

The Examiner cites Clark as teaching nacreous pigments comprising a plurality of high refractive index layers of titanium or zirconium dioxide layers, separated by one or more layers of organic film-forming layers or inorganic hydroxides or oxides. Clark teaches that the plurality of layers are separated by and adherent to one or more thin layers of organic film-forming layers or inorganic hydroxides or oxides that act as an interleaving agent, which is said to raise the refractive index of the titanium or zirconium dioxide layers.

As motivation for the asserted combination, the Examiner considered that both JP '071 and Clark teach the production of multilayered coated products for application to a colored

cosmetic. Both JP and Clark teach organic and inorganic layers. The Examiner's reason for rejection is that it would have been obvious for one of ordinary skill to optimize the layer thickness of the layers (formed by titanium oxide and organic resins) in the multilayered coated particle of JP '071 because Clark suggests that thickness of the layers and refractive index are important in controlling the optical properties and thus in retaining or eliminating the colored effects caused by optical interference. Accordingly, the Examiner believes that the expected result is that varying the thickness of the titanium dioxide results in a different color reflection. Further, depending on the desired color reflection, one of ordinary skill would have assertedly coated individual particles or all the particles with the same or different thickness of organic or inorganic intervening layers.

Applicants respectfully traverse the obviousness rejection.

The combination of JP '071 and Clark fails to render obvious the present invention.

In the present invention, the plural coating layers differing in refractive index impart color to the powder by a reflection and interference phenomenon. The present inventors discovered that a powder colored in a stable tone, such as blue, green, or yellow, can be obtained without a dye or a pigment by forming a thin film comprising plural layers differing in refractive index on the surface of a powder to regulate the multilayered film with respect to reflected-light interference waveform (see page 4, 12 lines up from the bottom).

This is entirely different from JP '071. JP '071 deals with a powder which would never cause interference since no transmission light exists due to the magnetite layer absorbing the light covered by the black magnetite. Accordingly, it is impossible to adopt a pigment simply

covered with a black film for the coloring system of Clark. Moreover, the powder in Clark is one comprising a substrate not covered with a continuous film, and thus having a different structure.

Even if there is a coloring technique based on the stacking of a powder covered with a film containing an organic layer with a multilayered film from a black coated powder as in JP '071, the light reflection at each interface would have to be predicted for conducting coloration by coating an actual powder, and it is impossible to achieve a desirable product not by a simple film design such as Clark's method, but by conducting a film design for each layer to achieve multilayered film interference as set forth in the present invention.

Accordingly, one skilled in the art would not be able to predict if the powder in concern is really colored or not over these two cited references.

In addition, see comparison Figures 1-2 below.

Fig. 1

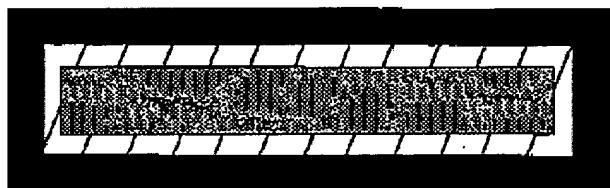


Figure 1 refers to the invention of JP '071. The central (gray) portion represents an organic core particle. The hatched portion, which is an inter layer, represents a metal oxide such

as cobalt oxide, or metal hydroxide. And the outermost layer is a double-layered inorganic material film formed on the organic nucleus particle of Fe_3O_4 (black).

Fig. 2



Figure 2 refers to the invention of Clark. The hatched three layers are high refractive index, inorganic layers comprising titanium oxide or zirconium oxide. Further, the two layers sandwiched between these layers are interleaving layers. It is stated that the interleaving layer is made of an organic or inorganic material. However, the individual layer has edge portions and is discontinuous.

From the above-cited Figure 2, the multi-layer coated powder containing the organic layers according to the present invention cannot be achieved. According to Clark, only the powder of this configuration is attained.

In view of the Figures displaying the inventions of JP '071 and Clark, one skilled in the art could not have achieved manufacture of a film in which the surface of the core particle is surrounded by at least one organic film.

In other words, Applicants submit that there is no technical motivation to impart color to the JP '071 powder by providing plural coating films of differing refractive index. This is because the black pigment disclosed by JP '071 neither requires nor benefits from any other

color. Thus, there is nothing in the prior art which suggests the desirability of adopting the coloring system of Clark in the black pigment of JP '071.

As discussed in previous responses, the particle of Clark et al has no core, and is produced by removing plural layers from a belt, followed by comminuting. Accordingly, the particle does not have a core on which plural layers have been coated, whereas the powder of the present invention requires a core (base particle) surrounded by plural coating layers which are different from each other in refractive index.

Moreover, in Clark, a peak or bottom is not corrected, and optimization of wavelength is not taken into account as required, for example, by present claim 12. Clark discloses a formula corresponding to equation (1) at column 6, lines 25-26. However, the powder of the present invention is brightly covered because the wavelength of the peak or bottom is made uniform among the constituent layers by correction as set forth in equation (2) of present claim 12. None of this is disclosed by the prior art relied upon by the Examiner.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a).

Response to Claim Rejection - 35 U.S.C. § 112

Claims 1-4, 6, 7, 9-16 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite. The Examiner considers the term “plural” to be broader than “at least three”.

In response, Applicants amend the claims as suggested by the Examiner, to delete the term “plural” in Claims 1, 13 and 14.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. § 112, second paragraph.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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